Brit. J. vener. Dis. (1975) **51**, 143

Correspondence

Epicillin in gonorrhoea

TO THE EDITOR,
British Journal of Venereal Diseases

SIR—May I comment on single-dose oral therapy for gonorrhoea with epicillin, a new semisynthetic penicillin structurally related to ampicillin? The antimicrobial spectrum and level of activity *in vitro* are similar to those of ampicillin (Basch, Erickson, and Gadebusch, 1971).

This study was made at the Houston Venereal Disease Clinic between February and July, 1974. Adult male patients with uncomplicated gonorrhoeal urethritis confirmed by culture, and non-pregnant women who had positive cultures for *Neisseria gonorrhoeae* were eligible for the study. Informed consent was obtained from all subjects. Patients with a history of allergy to penicillin or ampicillin were excluded, as were subjects with positive serological tests for syphilis.

At initial and follow-up visits specimens were obtained from the anterior urethra of men with calcium alginate urethro-genital swabs (Calgiswab®) and from the cervix, urethra, and rectum of women with a sterile cotton-tipped applicator. Specimens were plated directly on Thayer-Martin medium. Typical oxidase positive colonies containing Gram-negative diplococci were tested for fermentation with glucose, maltose, lactose, and sucrose. Isolates of *N. gonorrhoeae* were stored at −70°C. for antibiotic sensitivity testing.

All patients received 3·5 g. epicillin plus 1 g. probenecid as a single oral dose under supervision. Patients were instructed (and paid) to return between 4 and 7 days later. No patient admitted to additional sexual contact during the follow-up period. Treatment was considered a failure if a positive culture for *N. gonorrhoeae* was obtained at the time of return.

Minimum inhibitory concentrations (MIC) of epicillin and penicillin G were determined by the agar plate dilution technique for initial isolates of all patients who failed to respond and from additional patients chosen at random for purposes of comparison. Gonococcal isolates were thawed and grown for 18 hrs on chocolate agar and surface colonies were diluted in BHL broth and adjusted to a McFarland 1 scale for inoculation (McFarland, 1907). Serial $\log_2$ dilutions of each antibiotic were prepared with concentrations of 0·0002-2·0 μg./ml. in chocolate agar. Plates were incubated in candle jars at 35°C. The MIC was defined as the concentration that completely inhibited growth at the site of inoculation.

The results of treating patients with gonococcal infection involving the urethra, cervix, or anal canal are presented in the Table.

TABLE *Results of treatment with 3·5 g. epicillin plus 1 g. probenecid*

Sex	*Total treated*	*No. followed*	*Failures*	*Per cent. of those followed*
Males	61	48	3	6·25
Females	52	46	1	2·2

MALES 61 men received the treatment, and 48 returned for follow-up. Three had persistent asymptomatic infection at the time of the follow-up visit, giving a failure rate of 6 per cent.

FEMALES 52 women were treated with epicillin, and 46 returned for follow-up examination.

N. gonorrhoeae was isolated from the rectum of one woman at the time of follow-up—a 2 per cent. failure rate.

The medication was well tolerated and there were no untoward reactions or skin rashes associated with its use.

Relationship of therapeutic failure to epicillin resistance

The MICs of the initial isolates which were recoverable after freezing from three failures was 0·5 μg./ml. for epicillin and 0·25 μg./ml. for penicillin G, whereas the mean MIC of twelve isolates taken at random from the therapeutic successes was 0·25 μg./ml. for epicillin and 0·09 μg./ml. for penicillin G. Isolates from three of the men successfully treated with epicillin-probenecid also gave MICs of 0·5 μg/ml. epicillin.

These data show that a single 3·5 g. oral dose of epicillin taken simultaneously with 1 g. probenecid is an effective therapy for uncomplicated gonococcal infection in both men and women. Beck, Hubsher, and Caloza (1971) reported cures in sixteen (94 per cent.) of seventeen patients with proven gonorrhoea. Although comparison with other antibiotics was not undertaken as part of this study, recent studies in this clinic using identical techniques have given cure rates of 93 per cent. in men and women after 3·5 g. ampicillin plus 1 g. probenecid and 98 per cent. after 4·8 m.u. aqueous procaine penicillin G

plus 1 g. probenecid (Duncan, Knox, and Jackson, in press).

Yours faithfully,
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I wish to acknowledge the technical assistance of Mr. Charles Brady, Mrs. Betty French, and Mrs. Minnie Hickman, and to express my appreciation to Ann Gould for the MICs.

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Screening for treponemal infection

TO THE EDITOR,
British Journal of Venereal Diseases

SIR—With reference to the paper by Young, Henrichsen, and Robertson (1974), we have now screened by hand well over 20,000 sera with a combination of the *Treponema pallidum* haemagglutination assay (TPHA) and the rapid plasma reagin (RPR) card test. The former is carried out by the micromethod described by Johnston (1972) and the latter according to the manufacturers' instructions.

We find considerable saving in time and materials as compared with the screening methods we had previously used, as we neither separate nor inactivate the sera, but work 'off the clot' from the containers in which the samples are received. In this way two of us can screen 100 sera with ease in considerably less than a full morning.

The screening procedure picks up about 8 per cent. of sera requiring further evaluation, and all those showing positive or doubtful reactions in either or both tests are examined by the fluorescent treponemal antibody (absorbed) (FTA-ABS) test.

The relatively small numbers of cerebrospinal fluids we receive are all examined by the TPHA and the FTA-ABS test.

All sera positive or doubtful in either or both of the screening tests are titrated by the TPHA and RPR card methods. This has eliminated occasional technical false positives in the TPHA screen, and has confirmed the occasional occurrence of prozones in the RPR card test reported by Scrimgeour and Rodin (1973).

Until recently we carried out the VDRL slide test on all positives, but have now abandoned this, since we have found the RPR card tests consistently stronger by one doubling dilution.

We are still in some doubt about the place of the TPHA as a screening procedure. As an experiment, we are testing sera submitted by the consultants in the medical out-patients department at St. James's Hospital from patients in whom there is no clinical reason to suspect treponemal infection. Of the first 320 of these sera examined, 24 (7·5 per cent.) were positive and presented diagnostic and therapeutic problems. The breakdown of screening test results on these 24 sera is shown in the Table.

	R.P.R. Card Test		
TPHA test	*Positive*	*Negative*	*Total*
Positive	12	6	18
Doubtful	Nil	6	6
Negative	Nil	296	296
Total	12	308	320

With this reservation, we find the combination of TPHA and RPR card tests a relatively rapid, simple, and reliable screening procedure.

Yours faithfully,
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November 30, 1974

We are indebted to the consultant physicians at this Hospital for submitting sera from patients in whom treponemal infection was not suspected, and to Dr. A. E. Wilkinson and his Staff at the Venereal Diseases Reference Laboratory, London, E.1., for advice on techniques, for checking a proportion of our findings, especially in the early stages, and for examining numerous problem sera.

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